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| Unit 4A: Day 3: Thinking, Questioning, Listening | | Grade K-4 |
| 105 min | Math Learning Goals   * I will explore multiple-group problems and the use of a number line to represent fractions * I will identify ways to build more purposeful assessment for learning opportunities into my instruction * I will increase my understanding of learning goals | Materials   * Fraction cards * Chart paper * Markers * Journal cards * Treasure boxes |
|  | 🡪Cooperative Learning: Whole Group  Placing fractions on a number line  Each participant will receive a card with a fraction (between zero and four) represented as a picture, a number or words.  Participants arrange themselves in order along the number line.  There will be some equivalent fractions as well. Participants will need to decide how to demonstrate this.  Whole group discussion: What did you observe as we were solving problem? How would you morph this to do it in your classroom? How does using various models and allowing students to negotiate their position on the number line facilitate their understanding of both number lines and the size of fractions? | Professional  dialogue dialogue |
| Minds On… |
| 25 minutes |
|  | 🡪Problem-Solving: Groups of Four  Fraction investigations – Need an even number of groups if possible  Two participants in the group will solve the following problem on chart paper, using as many strategies as they can think of that students might use, and will explain their thinking using pictures or numbers or words.  *How would you share 3 brownies among 4 children?*  The third participant and fourth participant will observe the two problem solvers, and scribe as much as possible of what is being done/what is being said through this process.  Refer participants to information about assessment from Growing Success, page 28: *“Teachers will obtain assessment information through a variety of means, which may include formal and information observations, discussions, learning conversations, questioning, conferences…”*  Divide each group of four into two diads, so that someone who has done the problem solving is matched up with someone who has done the observations/conversations and then “squares” with partners from another group. One pair of partners will bring the student work from their group.  With their new quartet/square/foursome, discuss the following:  What information could you assess through observation?  What questions could you ask of students to assess understanding (conversations)?  What could you learn about the students from the student work?  Participants each record ideas (in their journal?) from their group work in preparation for the consolidation activity | * afl *Assessment* ***for*** *learning*  (inform future instruction) * aal *Assessment* ***as*** *learning*  (reflection)   aol  *Assessment* ***of*** *learning*  (student achievement). |
| Action! |
| 20 minutes  30 minutes |
|  | 🡪 Whole Group Debrief  Discuss as a whole group  Journal: Reflect on the following quote, and make some connections between the quote and the use of observations, conversations and student work.  *For those who are willing to make an effort, great miracles and wonderful treasures are in store.* [*Isaac Bashevis Singer*](http://www.brainyquote.com/quotes/quotes/i/isaacbashe143008.html) | Professional  dialogue dialogue |
| Consolidate Debrief |
| 20 minutes  10 minutes |
|  | Home Activity or Further Classroom Consolidation |  |

**Additional Ideas/Problems to Incorporate later?**

🡪 Inside-Outside Circle

Number the groups 1 to ? and put odd-numbered groups in the inside circle and even-numbered groups on the outside circle.

Participants begin by discussing the first question from above. They then rotate with each question until they have completed discussing each of the questions

*A zookeeper has 4 cups of frog food. His frog eats 1/3 of a cup of food each day. How long can he feed the frogs before the food runs out?*